(*Continued*)

2.4 C	No or Poor Primary or Secondary Review
2.4 D	Poor Data Correction
2.4 E	Other Data related
2.5	Poor Notification (Physician, Tech, Participating Program, Vendor etc)
2.6	Other (Missed Review, No Review, Inappropriate Release of PHI, Data etc)
3. Planned Deviation:	
3.1	HCT/P Related:
3.1 A	Non-Conforming Product, as Received
3.1 B	Non-Conforming to CPF Release Criteria
3.1 C	Other
3.2	SOP related
4. Equipment or Supply related:	
4.1	Recall or Notice
4.2	Calibration, Qualification or Maintenance related
4.3	Alarm or Monitor System related
4.4	Other (Expired Lot, Out of Order or Service, Inappropriate Use, etc)
5. Complaint:	
5.1	Internal
5.2	External
6. Other:	
6.1	Billing related
6.2	All Other

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DEVELOPMENT OF A DISTRIBUTED RESEARCH DATA MANAGEMENT SYSTEM FOR A COMPUTERIZED PEDIATRIC HEMATOLOGY/ONCOLOGY HEMATOPOIETIC STEM CELL TRANSPLANT REGISTRY – A COST EFFECTIVE MODULAR APPROACH

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The role of a reliable data management and information system in oncology services is well established. In addition to well-known risk determining factors, the outcome of treatment efforts is also influenced by the geography and genetic makeup of the population being treated. The toxicity of the therapy used requires close monitoring of protocol outcomes to determine the risk benefit. Also advances in diagnostic tools and criteria, and identification of new risk factors require constant update of the data items being collected in such a system.

Commercially available oncology data management and information processing systems are not always useful in fulfilling these requirements. The initial and maintenance costs for these programs also make it less feasible for use in resource poor countries.

Here we report our experience in the successful development and implementation of a comprehensive, efficient and scalable data management system specifically developed for hematopoietic stem cell transplantation of patients with pediatric hematology/oncology diseases. The data end-users (oncologists and transplanters) were critically involved with the system development and data items incorporated were based on their recommendations. Ethnic and social characteristics (such as tribal affiliations), which impact on disease genetics, were also included. The integrated model allows for concentric expansion and linkages that result in availability of data relating to multiple aspects of each patient's care throughout his course, including pre- and post HSCT. Changes in treatment protocols and diagnostic tests can be easily incorporated as required. Policies and procedures were developed simultaneously to direct the workings of this data management system.

The simplicity, efficiency and scalability of the system design, and its affordability makes it a model for use in other institutions, especially in developing countries.

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IMPLEMENTATION OF HEMATOLOGY-ONCOLOGY LECTURE SERIES FOR HOUSESTAFF

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Background: We have a ward service dedicated to cancer patients. Housestaff taking care of these patients includes three interns and a fellow. There is also a consult service comprising a fellow, an intern, and a resident. There is a need to implement formal, didactic, teaching devoted to topics in hematology and oncology to improve quality of care.

Objective: The development of a monthly lecture series for housestaff rotating on a hematology-oncology rotation focusing on three key areas:

a) Knowledge to manage the patients on the hematology-oncology service

b) What one is most likely to encounter in the practice of medicine, regardless of eventual subspecialty field.

c) Relevance for Internal Medicine exams.

Methods: Topics chosen based on relevance included leukemia, lymphoma, multiple myeloma, transplantation (these first four comprising >75% of patients on service), coagulation, breast cancer, lung cancer, colon cancer, gynecological cancer, and pain management/supportive care. Speakers included full-time faculty as well as private physicians affiliated with the cancer center. Emails and phone calls were placed to the physicians and announcements made at division meetings and schedules developed. Test questions were given to housestaff at the start of their one month rotation and at the end of rotation. Lectures were scheduled for afternoons if possible to avoid conflicts with morning rounds. Occasional morning talks were necessary however due to schedule issues. Format of lectures was flexible (power point, dry-eraser board).

Results: Overall feedback was positive for the lectures. The two conditions affecting optimal success of the program concerned scheduling, including housestaff schedules and availability of when and which speakers could lecture. The question/answer testing is early in the process.

Conclusion: A didactic lecture series is an important aspect of stem cell hematology-oncology education for housestaff and will improve quality of care of the stem cell transplant service. Repeating lectures every month is a challenge for several reasons. Possible interventions in the future may include:

a) Focusing lecturing duties to full-time faculty, with an emphasis on faculty currently on service

b) Creating power point presentations and handouts on file for use by multiple people so that rotating faculty may use these materials for talks

c) Statistical analysis of scores from pre-rotation and post-rotation exams to assess housestaff performance

PHARMACY ORAL

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THE EFFICACY OF APREPITANT ADDED TO ONDANSETRON AND DEXAMETHASONE FOR PREVENTION OF CHEMOTHERAPY INDUCED NAUSEA AND VOMITING (CINV) DURING AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANTATION (HSCT)

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Despite premedication with dexamethasone and ondansetron, acute and delayed CINV remains a persistent problem in the setting of autologous HSCT. Aprepitant is an oral neurokinin-1

antagonist approved for the prevention of acute and delayed CINV associated with initial and repeat courses of moderately and highly emetogenic chemotherapy in combination with other antiemetics. We evaluated the outcomes of ondansetron and dexamethasone compared with aprepitant, ondansetron, and dexamethasone in patients undergoing autologous HSCT, with BEAM or Melphalan conditioning, in a randomized single center clinical trial. Patients were randomized to receive either ondansetron and dexamethasone on the days of chemotherapy followed by 3 days of dexamethasone (OD) or OD combined with aprepitant 125 mg on the first day of conditioning, followed by aprepitant 80 mg daily until day 0 (AOD). Rescue antiemetics were allowed. Acute phase was defined as each day (24-hr period) of chemotherapy. Delayed phase was defined as the 5 days (0 – 120 hrs) following the last dose of chemotherapy. Complete response (CR) was defined as no emesis or rescue antiemetics in a 24-hour period. Major response (MaR) was defined as 1 episode of emesis or the need for rescue antiemetics in a 24-hour period. Twenty-four patients were randomized to each arm. Age, gender, prior history of CINV, and conditioning regimen were similar between OD and AOD. There were no significant differences between the two arms in the rates of acute or delayed nausea, CR, and MaR (Table 1). Despite premedication, almost all of the patients experienced nausea and/or vomiting after the completion of the study period up to day +30 (OD 100% and AOD 83.3%; p = 0.11). Grade 3/4 nonhematologic toxicity was similar between the two groups. The most common toxicities reported were nausea, hypophosphatemia, anorexia, and infection. Although the CR rates for acute and delayed emesis were greater in AOD, the addition of aprepitant did not significantly improve CINV control in this small autologous HSCT population.

Table 1. Antiemetic Response Rates

	OD (%) n = 24	AOD (%) n = 24	
Acute Nausea	25	25	p = 1.0
Delayed Nausea	87.5	87.5	p = 1.0
Acute Phase			
CR	62.5	75	p = 0.53
MaR	37.5	25	
Delayed Phase			
CR	8.3	16.7	p = 0.47
MaR	62.5	66.7	
Other	29.2	16.6	

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PHARMACOKINETICS OF MYCOPHENOLATE MOFETIL (MMF) IN COMBINATION WITH TACROLIMUS IN PEDIATRIC ALLOGENEIC STEM CELL TRANSPLANT (ALLOSCT) RECIPIENTS ≤ 12 YEARS OF AGE

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Background: The optimal dosing of MMF in pediatric AlloSCT recipients is unknown.

Objective: To determine MMF PK in pediatric AlloSCT recipients < 12 years of age.

Methods: GVHD prophylaxis included tacrolimus Day –1 (5-20 ng/mL) and MMF 900 mg/m^2 IV Q6H starting on Day +1, then converted to PO (same dose) after Day +14. MPA serum samples were drawn on Days +1, +7, +14 (IV phase) and twice between Day +45-+100 (PO phase) at hour 0, 0.5, 1, 2, 3, 4, 6 post-dose. MPA plasma concentrations were determined by reverse-phase HPLC and LC/MS/MS. Non-compartmental PK analysis of total MPA was performed.

Results: PK was completed in 25 pts: mean age 5 yrs; M:F 12:13; 14 pts < 6 yrs & 11 pts 6-12 yrs; 11 pts non-malignant & 14 with malignant disease; 14 pts received unrelated AlloSCT. Patients with non-malignant disease received reduced-intensity conditioning. Median time to myeloid and platelet engraftment was 21 and 33 days, respectively. KM probability of Grade II-IV acute GVHD (aGVHD) and limited + extensive chronic GVHD was 52% and 39.8%, respectively. Probability of 1 year OS was 78.8% (CI_{95}: 62%-95%). There was a significant inter- and intrapatient variability in AUC_{0-6} and MPA trough (C_0) (Table 1). There was no significant difference in MMF PK between pts < 6 vs 6-12 yrs of age following IV or PO MMF administration. Univariate analyses did not find a correlation between AUC, C_0 or C_{ss} on Days 7 or 14 and risk of aGVHD. There was a significant ↑ in MPA trough on day 7 vs 1 (P = 0.009), ↑AUC on day 14 vs 7 (P = 0.049) and ↓ V_{ss} day 14 vs day 1 & 7 (P = 0.001). There was also a significant ↑ $T_{1/2}$ on day 45 vs day 1 and 7 (P = 0.043 and P = 0.042, respectively) as well as ↑ CL_{ss} and V_{ss} on day 45 vs day 14 (P = 0.01 for CL_{ss} and P = 0.006 for V_{ss}).

Conclusion: This change in PK parameters with time could be due to improved mucosal healing following conditioning that leads to improved drug absorption and enterohepatic recirculation. Based on these results, we recommend reducing MMF dose to 600-900 mg/m^2 q8 h in the early post-transplant period in children <12 yrs of age to target C_{ss} = 2.5-5 mg/L (Nash et al, BBMT 2005).

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EVALUATION OF THE INITIAL DOSE CALCULATION OF INTRAVENOUS BUSULFAN (BUSULFEX®) IN ADULTS RECEIVING A CONVENTIONAL BU/CY2 ALLOGENEIC PREPARATIVE REGIMEN

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Several studies have reported that the variability in pharmacokinetic (PK) parameters after intravenous busulfan dosing is significantly lower than that recorded after dosing with the oral formulation. However, other published experiences have concluded that both the oral and intravenous formulation of busulfan yield wide interpatient variability in PK parameters.

Table 1.

	IV MMF Administration			MMF PO 1st sample	MMF PO 2nd sample
Mean pK values (±SD)	Day +1 (N = 18)	Day +7 (N = 23)	Day +14 (N = 23)	Day +45-100 (N = 13)	Day +45-100 (N = 7)
C_{max}mg/L)	15.7 ± 23.6	12.1 ± 5.4	17.8 ± 15.2	13.4 ± 12.8	13.5 ± 8.4
T_{max} (h)	1.97 ± 0.44	1.98 ± 0.57	1.87 ± 0.34	1.65 ± 1.05	1.36 ± 0.85
C_0 (mg/L)	0.31 ± 0.33	0.68 ± 0.61	0.68 ± 0.64	1.39 ± 1.44	1.66 ± 1.48
C_{ss} (mg/L)	5.57 ± 7.74	4.84 ± 2.16	6.35 ± 3.11	5.00 ± 3.46	7.22 ± 3.70
AUC_{0-6} (mg•h/L)	32.8 ± 46.4	27.4 ± 11.9	36.6 ± 18.6	26.4 ± 20.6	27.45 ± 16.0
CL_{ss} (L/h•kg)	1.80 ± 1.10	1.48 ± 0.65	1.30 ± 0.63	2.32 ± 1.42	1.61 ± 1.02
V_{ss} (L/kg)	3.60 ± 2.04	3.60 ± 1.63	3.00 ± 1.02	10.43 ± 8.99	21.22 ± 38.25
$T_{1/2}$ (h)	0.94 ± 0.64	1.38 ± 1.16	1.25 ± 1.02	2.98 ± 2.38	12.78 ± 20.58